# "A MATLAB CODE TO CONVERT AN ANALOG SIGNAL INTO DISCRETE LEVELS"

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## ABSTRACT

*In this paper we have created shortest code of matlab which can be used to convert analog audio signals to discrete levelsThe entire code is simulated on v.Matlab8.0. Here we used smallest algorithms which can make it small for analog to digital conversion.Results obtained by us are very useful and innovative itself so that we can directly apply for any A/D conversion.*

*Keywords -A/D- Analog to Digital, v.matlab8.0- version of matlab*

## 1. INTRODUCTION

In this project, we have used sampling thoroughly. Sampling is a basic principle of Digital communication in which any analog signal can be converted into its equivalent discrete signals.
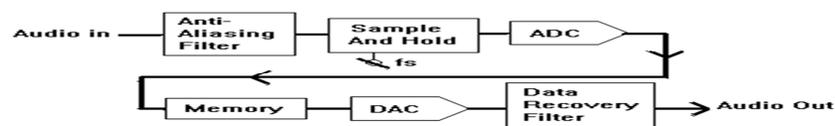
One more important criteria that is used is Nyquist criteria. The Nyquist theorm is also known as sampling theorm .It is used to remove aliasing of signals in frequency domain.

The Nyquist criteria is fs >= 2fm

The major advantage here is of sampling itself. Sampling is on eof the most useful method used by communication domain experts.

## 2. PROCESS

**(i) Block diagram**



**Figure 1: Block Diagram of Sampling**

**(ii) Working-**

Here the audio signal is being fed to the anti aliasing filter and then the filter attenuates the higher frequencies. It prevents the aliasing components from being sampled.

Then the audio signal is fed to the sample and hold circuits, which can samples the voltage of a continuously varying analog  modulating signal and holds its value at a constant level for a specified minimum period of time.
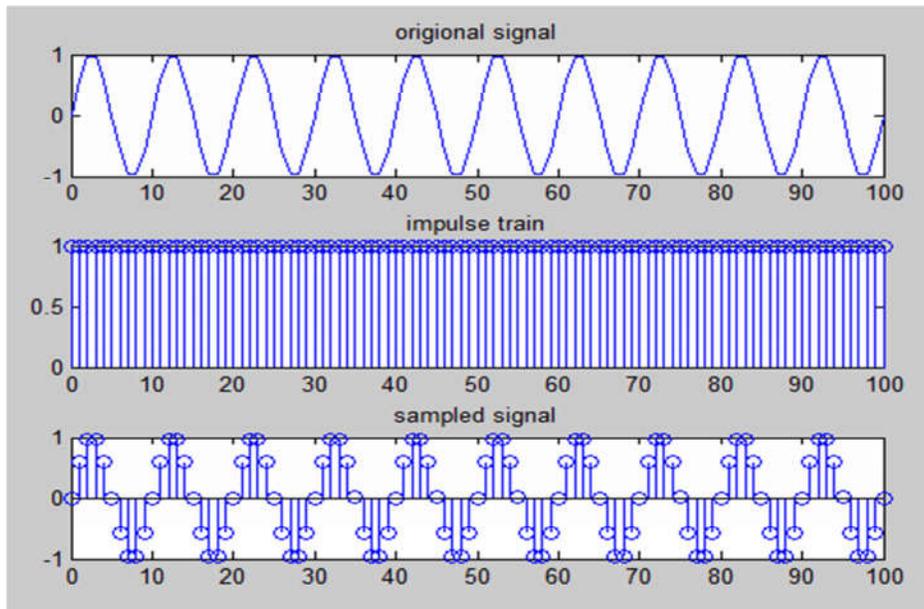
(iii) **Circuit diagram**
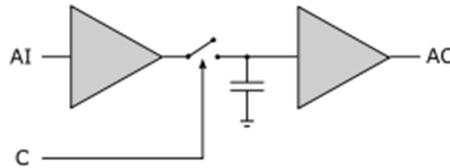


### 3.  RESULTS

This article discusses about the code which can be used to convert the analog audio signal to discrete signal.We have gone through the Matlab code for entire simulation. The purpose of this code is that is very efficient and small.

### 4.  GRAPHS



**Figure 2: Simulated Results of Converted A/D Signal**

### 5.  CONCLUSION

We have successfully designed a small and effective code to convert any kind of analog audio signal to discrete signal in one go

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## 6.  ACKNOWLEDGEMENT

### REFERENCES

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